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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MUETING, RAASCH & GEBHARDT, P.A. P.O. BOX 581415 MINNEAPOLIS, MN 55458			EXAMINER FORD, JOHN K	
			ART UNIT 3744	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

ED

<b>Office Action Summary</b>	<b>Application No.</b> 10/721,698	<b>Applicant(s)</b> JANSSEN, TERRANCE E.	
	<b>Examiner</b> John K. Ford	<b>Art Unit</b> 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 5/16/07 + 12/12/06
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-18, 20-39 is/are pending in the application.
- 4a) Of the above claim(s) 10-12, 20-27, 33-35, 37-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13-18, 28-31 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/16/07</u> | 6) <input type="checkbox"/> Other: _____  |

Applicant's response of May 16, 2007, supplementing his response of December 12, 2006, has been carefully considered. Those two responses are addressed in turn.

First matter in May 16, 2007 response:

On page 18 of the December 6, 2006 response, Janssen declaration, first paragraph, it states that applicant concurs with the examiner's statement that from the information that applicant has provided (up to this point in time) about the GFX heat exchanger, it is not used in a flooded condition. Applicant then proceeds, in Exhibit E-2 attached to the December 6, 2006, to disclose to the examiner, for the first time, new materials related to the GFX heat exchanger wherein the GFX Model G2-12 is used in a vertical water main in a flooded condition for providing instant hot water in a high-rise building (Exhibit E-2, page 2), in direct conflict to what the examiner had deduced. This is disclosure that is materially new to the application and it must be submitted with proper IDS formality (1.97(e) statement and/or fee under 1.17(p), as applicable). The examiner is aware that the web page reproduction at the bottom left states "?2002 Waterfilm Energy Inc.", however this notation, aside from being ambiguous, is not deemed dispositive of how old that prior art actually is. For example, in Exhibit A-3, attached to the February 14, 2006 response, applicant relied on a webpage dated December of 2005 to illustrate prior art that is apparently older than November 27, 2001 (Is that correct? Failure to address this issue will be taken as an admission that it is true) and continues to do so in the December 6, 2006 response (Janssen declaration

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regarding copying Attachment B, paragraph 3). Thus, it is apparent to the examiner that based on applicant's own submissions that the date of publication on the GFX web page is not dispositive of its prior art status. Pursuant to the obligations set forth in the decision of Brasseler v. Stryker, 60 USPQ2d, 1482 (Fed. Cir. 2001) applicant is again required to use reasonable efforts to ascertain the prior art status of the new materials related to the GFX heat exchanger wherein the GFX Model G2-12 is used in a vertical water main in a flooded condition for providing instant hot water in a high-rise building (Exhibit E-2, page 2). Examples of reasonable efforts and reasonable inquiry are set forth in the Brasseler decision attached to the previous office action. As set forth in Brasseler, willful ignorance is not acceptable. This reasonable inquiry will include an explanation in applicant's forthcoming response of what steps were taken to ascertain the prior art status of that disclosure. Applicant has established a long-standing relationship with Mr. John Lebo and Mr. Carmine Vasile (both by telephone and E-mail) of Doucette Industries/GFX as evidenced by the record of numerous communications detailed in applicant's declarations. The information the examiner is requiring applicant to produce about the prior art GFX heat exchanger is believed to only involve a simple telephone call or E-mail or FAX.

In response to this matter, applicant using the "Wayback Machine" has deduced that prior art Exhibit E-2 is at least as old as August 21, 2002. That fact is not particularly helpful as counsel is no doubt aware. The key question is whether or not it pre-dates November 27, 2001. Further counsel has stated that it is not used in a water main, a statement that contradicts a previous statement made on page 19 of applicant's

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December 6, 2006 response, to wit: "... the enclosed Attachment A that includes web site information that defines a "main" as "a water pipe that is under pressure all the time". By applicant's own definition of "main" proffered on page 19 of the December 6, 2006 response, Exhibit E-2 is a "main" because it is a water pipe that is "flooded" and under pressure at all times and counsel's remarks to the contrary are not convincing.

Disturbingly, applicant has failed to make what the examiner considers reasonable attempts to ascertain if the prior art illustrated in Exhibit E-2 was in fact actually put into public use prior to November 27, 2001, arguing that Mr. Lebo and Mr. Vasile, with whom applicant has had a longtime business relationship, could potentially at some future date be adverse parties. This argument presumes that this application will be allowed and it is submitted that Mr. Lebo and Mr. Vasile will be much more "adverse" to a patent holder who was given an opportunity to ascertain the critical date of extremely relevant prior art before the PTO and refused to do so because he didn't want to make a phone call. The information being withheld from the examiner by applicant by not making this inquiry may ultimately decide whether Mr. Vasile and Mr. Lebo are ever to be "adverse parties". That applicant is without means to substantiate the truthfulness of the information given as an argument against even inquiring has no traction. First, the examiner does not understand why applicant or his counsel presumes Mr. Lebo or Mr. Vasile would lie as to the date their system was installed in a building. Applicant has no more reason to believe that than the examiner has to believe applicant would lie about his own system. Have they, Mr. Lebo or Mr. Vasile, ever lied to applicant before? Second, applicant's argument presumes that the installation date

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given will be before November 27, 2001. Applicant doesn't know that, does he? What if the install date is after November 27, 2001? The examiner assumes applicant will believe that, if they (Mr. Lebo or Mr. Vasile) so state. Moreover, all applicant would have to do to reasonably substantiate the date would be to write or call the building owner and inquire whether the system was installed on a given date. It is submitted that the installation date is very reasonably ascertainable to applicant and again applicant is strongly urged to make the relevant telephone call(s), rather than wasting time and resources by not making the relevant inquiry, as occurred in Brasseler.

Second Matter:

In addition, applicant is required to disclose to the examiner if the tube coil that is wrapped around the main straight section of pipe of the GFX heat exchanger discussed above is flattened in the manner claimed in original claim 9. Contrary to applicant's previous arguments the wrapped coil construction is not shown in USP 4,619,311 (Mr. Carmine Vasile being part of the inventive entity of that patent) and USP 4,611,311 is not equivalent to the other GFX sales literature applicant has submitted. The examiner has every reason to believe that applicant either knows the answer to this question (whether the tube coil that is wrapped around the main straight section of pipe of the GFX heat exchanger discussed above is flattened) or could ascertain it easily given that applicant has established a long-standing relationship with Mr. John Lebo and Mr. Carmine Vasile (both by telephone and E-mail) of Doucette Industries/GFX as

evidenced by the record of numerous communications detailed in applicant's declarations.

In response to this matter, applicant points to a statement made deep within a declaration to overcome a cited patent under 37 CFR 1.131, (Janssen, Revised Declaration under 1.131, dated 2/14/2006, page 5, bottom), not exactly the place one normally discloses relevant prior art, that the GFX does have a flattened surface as claimed in original claim 9 (and as now claimed in each of the independent claims as a consequence of amendment). It is unclear to the examiner what applicant is admitting to here. Is applicant admitting that all of the GFX heat exchangers that have a helical coil wrapped around the outside of the main pipe that he has submitted thus far to be considered as prior art, regardless of the date of publication on the Web, have a flattened side wall on the helical coil as claimed in original claim 9 and are older than November 27, 2001? If that is not true, what exactly are you admitting to? Failure to address this point will be taken as an admission that the examiner's statement of what he believes applicant's admission to be will be taken as fact for this prosecution.

Third Matter:

Regarding the alleged copying by GFX set forth in Attachment B to the December 6, 2006 response, the examiner is requiring applicant to disclose if any sort of confidentiality agreement was signed between GFX and Mr. Janssen in regard to Mr. Janssen's water mains heat exchanger idea. If so, disclosure of the general terms of

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that agreement is required. The existence or non-existence of such a confidentiality agreement is extremely material to how much weight to give Exhibit E-3 of the December 6, 2006 response. For example, if Mr. Lebo and Mr. Vasile were unaware of any duty of confidentiality, it is not understood how the publication of the idea on the GFX website constitutes "copying." Would it not stand to reason that GFX just wanted to sell more of its heat exchanger product and the water mains idea, assuming it wasn't confidential, merely represented another opportunity to expand the market for their heat exchanger product?

In response to this matter, applicant states there was no confidentiality agreement, as the examiner suspected to be the case. He further states that the lack of such an agreement is "not relevant" to the alleged "copying". The examiner completely disagrees. We are a nation that values the free exchange of words and ideas. Unless there is some legitimate prohibition to the free exchange of information (such as a confidentiality agreement or some other legitimate suppression of the "freedom of speech"), it is the examiner's understanding that ideas belong to no one. Such is the case here. Publishing non-confidential or unprotected information on a website is not "copying". It cannot be copying until someone else builds it and uses it and applicant has presented no evidence that anyone has done this. Even if someone else uses that unprotected information and builds a system, that arguably might suggest that the system has some merit and is of some economic interest, but even that is not "copying" (where "copying" implies some sort of improper motive). In short, applicant has presented no evidence that anything has been copied. He has only provided evidence



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that the non-confidential idea has been posted on a web-site. To illustrate the examiner's point, there are many terrible ideas posted on web-sites. It does not immediately follow that people use them.

Fourth Matter:

In doing a routine name search on the inventor of this application, the examiner was disturbed to find in the PTO records evidence of another patent application (SN 10/643,440) filed by applicant on the same invention (in a filing including the inventor's middle name instead of middle initial). MPEP 2001.06(b) requires disclosure of related co-pending applications and that was not done in this application or in that application. Aside from SN 10/643,440, and bearing in mind what is stated in MPEP 2001.06(b) are there any other applications that the examiner should be apprised of?

In response to this matter applicant argues because SN 10/643,440 is currently abandoned that that somehow negates the fact that these two applications were filed within a few months of one another and were thus co-pending for years, each without any cross reference to the other application during the entire time that they were co-pending. As far as the allegation of the information in one application lacking materiality as to the other, to respond to such an argument would be to give it a dignity that it does not deserve. It is submitted that the prosecution of two substantially overlapping applications in subject matter and claims in parallel at the PTO at approximately the

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same time without cross referencing them to one another could not be more contrary to the provisions of MPEP 2001.06(b).

The examiner is attempting to make a final determination as to the patentability of this invention but is being stymied by the ambiguousness of the information before the examiner. Pursuant to the goal of an orderly and proper prosecution, the examiner needs to have the best possible disclosure of the relevant prior art and information before him and, at present, this need is not being fulfilled.

#### THE DECEMBER 6, 2006 RESPONSE

Applicant's response of December 6, 2006 has been studied carefully.

#### REQUIREMENT FOR DOCUMENTS

In the previous office action the Examiner required a copy of the presentation made by applicant November 13, 2002 in declaration Exhibit B-7 (entitled "Using Potable Water in Heat Exchangers") assuming it was public knowledge. Applicant did not for various reasons set for the on page 13 of the December 6, 2006 response.

#### CONCEPTION PRIOR TO THE CRITICAL DATE

In the December 6, 2006 response counsel made it clear that Mr. Anderson is not a patent attorney. Exhibit A-2 (received 2/14/06) confused the examiner in this regard because of all of the apparently irrelevant material included in regard to Mr. Huusko. Counsel also made it clear, without offering any supporting reasons, that Brian Urlaub, the person who actually drew the sketch A-1 and therefore the person most familiar with it, is "not available at this time." Counsel never explained why Mr. Urlaub is "unavailable". The examiner needs a reason. In lieu of him, (whom the examiner continues to believe would have provided the best evidence) counsel made it clear that the examiner must accept the declaration of Mr. Anderson as definitive in the matter because he signed a perjury clause and in the absence of any material to impeach his veracity. Since the examiner has no powers of discovery, no power to cross-examine or view the demeanor of the witness, and no access to all of the information available to applicant, the likelihood of impeachment materials being known to the examiner is essentially nonexistent. In view of counsel's latest arguments, and no evidence to the contrary for the reasons stated above, the examiner concedes that the declarations provided up to this point, including those in the latest response of December 6, 2006, establish conception before the date of the JP 2002-30717 reference (published January 31, 2002). The examiner had no intention of causing "insult" to Mr. Anderson's ability to remember details and counsel's suggestion that that was the examiner's intent is inappropriate and counter-productive. The examiner was just drawing from his own experience having difficulty remembering details of things that occurred five years

before at that level of detail unless they were particularly vivid memories. Apparently Mr. Anderson has a very good memory for detail.

#### LACK OF DILIGENCE AS TO THE INVENTION

The diligence requirement is set forth in MPEP Sections 715.07(a) and 2138.06 and those sections are incorporated here by reference.

In the response of December 6, 2006, counsel points out that exhibit B-1 (which is out of sequence timewise) is dated June 28, 2002. Even assuming that counsel was correct and that Exhibit B-1 (which, by its own terms is an E-mail that asks for a price on a heat exchanger, which may or may not be related to the disclosure of the claimed system) relates to the claimed invention and shows diligence as to the claimed invention, there is still no diligence shown from January 31, 2002 through June 28, 2002 as to the claimed invention, approximately 6 months of unexplained non-activity. According to the MPEP 2138.06 even a two-day period of inactivity can be fatal. Counsel asserts, correctly, "One cannot just bypass all the regulatory and site restrictions and proceed in installing a system as claimed without permission and approval by regulatory authorities. It takes time and effort to obtain such permissions" (December 6, 2006 response, page 21). The only permission that applicant ever asked for did not come until November 29, 2002 (and that is only a draft according to Exhibit B-8) another unexplained lapse of nearly ten months from January 31, 2002 and five months from the June 28, 2002 inquiry as to how much a heat exchanger would cost.

Contrary to counsel's assertions none of Exhibits B-2, B-3, B-4 or B-5 by their own terms relate to the claimed invention. They relate to generalized offers to install all sorts of disparate systems ranging from wind to photovoltaics (see Exhibit B-3, for example). Furthermore, "individual geothermal HVAC systems" would not, as the term would be understood by those of skill in this art, necessarily relate to exchanging heat with a water main. Only B-1 (dated 6/28/02), B-6 (dated 8/29/02) B-7 (dated 11/4/02), B-8 (11/13/02) and B-9 (12/21/02) do, with many months of intervening unexplained non-activity, particularly between 01/31/02 and 06/28/02, as to the claimed invention. Generalized attempted sales activity as to a wide variety of alternative energy systems does not demonstrate diligence as to the claimed invention.

Exhibit B-2 (January 15, 2002) "Metropolitan Law Center LTD" does not disclose any diligence as to the claimed invention. It only shows some "central geothermal system" activity. In fact it appears that that some sort of loop system to each lot was contemplated – not what was disclosed in the aforementioned drawing of December 2001.

Exhibit B-3 (May 23, 2002) "Bolin Creek Cohousing" does not disclose any diligence as to the claimed invention. It only shows some generalized "Alternative Energy, geothermal, Wind Generation and Photovoltaics" activity. Nothing corresponds to that system disclosed in the aforementioned drawing of December 2001.

Exhibit B-3 (May 28, 2002) "Bolin Creek Cohousing" does not disclose any diligence as to the claimed invention. It only shows some generalized "Alternative Energy, geothermal, Wind Generation and Photovoltaics and Fuel Cells" activity. Nothing corresponds to that system disclosed in the aforementioned drawing of December 2001.

Exhibit B-4 (Notes/History, 2002). Again, no description of anything other than a broad offer to install any of a large number of alternative energy sources. Nothing specific to the system disclosed in the aforementioned drawing of December 2001 is mentioned.

Exhibit B-5 (Notes/History, 2002). Again, no description of anything other than a broad offer to install any of a large number of alternative energy sources. Nothing specific to the system disclosed in the aforementioned drawing of December 2001 is mentioned.

Exhibit B-6 (August 29, 2002). The bare mention of in Subject title "Water Main Heat Exchanger" and nothing more is disclosed. Nothing specific to the system disclosed in the aforementioned drawing of December 2001 is disclosed. No details as to what it is are given.

Exhibit B-7 (November 4, 2002). "Using Potable Water in Heat Exchangers". Again, there are no details. Nothing specific to the system disclosed in the aforementioned drawing of December 2001 is disclosed.

Exhibit B-8, (Draft, dated November 29, 2002). First specific mention of the system disclosed in the aforementioned drawing of December 2001.

Exhibit B-9, (December 21, 2003). Second specific mention of the system disclosed in the aforementioned drawing of December 2001.

These exhibits do not support diligence for at least the time period between 01/31/02 and 06/28/02 and possibly the time period from 01/31/02 to 11/29/02, as to the claimed invention, because nothing in these supposed acts of diligence appears to be directly related to the invention claimed.

The very first problem in installing one of these heat exchangers in an existing water main would be the fact that it would undoubtedly violate municipal potable water and health codes. There is nothing to show that this problem even surfaced in applicant's evidentiary materials until November 29, 2002, when applicant requested a "variance" or waiver to permit insertion of the GFX heat exchanger into a water main in Minnesota. This does not demonstrate that applicant was diligent for the entire period from December 2001 until November 2002, most notably between 1/31/02 and 6/28/02. Applicant has failed to provide persuasive evidence that he was diligent as to the claimed invention for at least the time period from 1/31/02 to 6/28/02. Accordingly he is denied any earlier date of invention than that of his provisional application (i.e. 11/27/02). For reasons detailed below, applicant is not even entitled to that effective filing date.

Moreover, the assertion (December 6, 2006 response, bottom of page 21) that from 1/31/02 to 6/28/02 applicant was scouting for a site in which to install the water mains heat exchanger system claimed here is without any facts to support it in the record. Those documents simply support that Mr. Janssen just wanted to sell whatever kind of alternative energy system (including wind, solar etc) the buyer wanted to buy. There is no mention of applicant's water mains heat pump system in any of Exhibits B2-B5. Nothing is disclosed except an offer to sell some undisclosed general geothermal system, not the water mains type that is disclosed and claimed here. From the evidence presented thus far applicant did not get serious about his invention (become diligent about his invention) until November 29, 2002 when he started to apply for a variance. There is no evidence that in scouting for an installation site, assuming that was what he was doing from 1/31/02 to at least 6/28/02, that Mr. Janssen was making anyone including his prospective customers aware of his invention.

Furthermore, a comparison of provisional application 60/429,160 and the current application 10/721,698 shows that applicant has claimed subject matter here in all of the currently examined claims that is not supported by any disclosure in provisional application 60/429,160, such as, but not limited to, the heat transfer pipe having a "flattened surface." Therefore, since all of the claimed subject matter in the later application must be disclosed in the provisional application in order for the later filed application to be entitled to the filing date of the provisional (see 35 USC 119(a) and the case law interpreting it), applicant is also denied benefit of the filing date of the



provisional application. The oldest effective filing date that applicant is entitled to as to the currently claimed subject matter is the filing date of the current application: November 25, 2003.

#### PRIOR ART REJECTIONS

Claims 1-8, 13-18, 28-31 and 36 remain readable on the elected species after the cancellation of claims 9, 19 and 32. Claims 10-12, 20-27, 33-35 and 37-39 are withdrawn from consideration at this time.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 3, 4, 6, 7, 8, 13, 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Bardenheier (USP 4,782,888), JP 2002-30717 and any one of applicant's new admission (May 15, 2007 response, page 4 of 5, section entitled "Second Matter") that the prior art GFX heat exchanger has a wraparound tube with a flattened side wall satisfying all of the limitations of original claim 9, Clancy (USP 2,364,130), JP 88730 (Fig. 3) or JP 9-229574 (Figs. 3-5).

Bardenheier teaches a municipal water line 16 with a heat exchanger 14 in thermal contact with the water in the municipal water main 16. The heat exchanger 14 transfers heat to a primary heat transfer liquid (water or water and propylene glycol) circulated in pipe system 11. Individual heat pumps (see col. 6, line 33) can be used to transfer heat from the primary heat transfer liquid to the secondary fluid circulated through pipes 13. This secondary fluid can be FREON (see col. 3 lines 33-40) used to provide heating or cooling to a conditioned space occupied by the user. No details of the actual construction of heat exchanger 14 are disclosed.

Figure 4 of JP '717 discloses a pre-fabricated pipe 2 having a heat exchanger 1 can be inserted into an existing (waste) water pipe 2 (see paragraphs 65 and 76 of the translation describing the installation in Figures 4 and 7, respectively). The heat exchanger 1 transfers heat to a primary heat transfer fluid circulated in pipe 17, which forms a closed circuit. A reversible heat pump 11 provides heating or cooling to load equipment 20.

To have used the pre-fabricated pipe section 2 with heat exchanger tube 1 of JP'717 in place of schematically shown heat exchanger 14 of Bardenheier would have been obvious to avoid the problems disclosed in JP '717, paragraph 6 and 7, incorporated here by reference, and to ease construction as disclosed in JP '717, paragraph 8.

Alternatively, to have used the apparatus of JP 2002-30717 to recover heat from a municipal water supply rather than a waste water source would have been obvious in

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view of the fact that Bardenheier discloses municipal water “provides an outstanding source or sink of low grade thermal energy” for reasons stated in col. 4, lines 16-36 of Bardenheier, incorporated here by reference. That is, the prefabricated pipe section 2 of JP ‘717 would have been simply inserted into a new construction or an existing water main, rather than into a new construction or an existing waste water pipe. The water main installation would obviously require increased provisions to prevent contamination of the potable water in the event of a pipe breach, which is probably why most patents in this field prefer wastewater, however, there are clear reasons taught by Bardenheier for why potable water from the mains might be preferable.

Applicant’s new admission (May 15, 2007 response, page 4 of 5, section entitled “Second Matter”) that the prior art GFX heat exchanger has a wraparound tube with a flattened side wall satisfying all of the limitations of original claim 9 (which limitations of original claim 9 have now been rewritten into claims 1, 14 and 28) is acknowledged here. As well, Clancy disclosed a coil 30 of a somewhat flattened cross-section (col. 3, lines 38-42, “so as to increase the area of contact with the sleeve”) that it is helically wound around. Essentially the same disclosure is found in the referenced figures in the two Japanese publications. To have flattened the cross-section of the heat exchanger tubing wound around the water pipe as shown in the prior art (JP ‘717) to increase the contact area and, hence, the heat transfer would have been obvious to one of ordinary skill in the art, in view of these four separate teachings of the same.

Regarding the claimed monitoring equipment, see element 18 of Bardenheier and regarding the claimed "enclosing" structure see heat insulator 3 and protective cover 4 of JP '717.

Claims 5, 16, 28-31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art discussed immediately above (Bardenheier/JP '717/GFX etc), as applied to claims 4 and 15 above, and further in view of Fr 2381869 and Sherman.

Fr '869 teaches an enclosure 1 for a water main 5 and a sewer pipe 6 that are essentially of identical construction. A cover 2 is shown that clips into place. To have used such an enclosure to enclose the water main of the prior art would have been obvious to permit easy access for inspection or repair and likewise to have locked it to prevent unauthorized access would have been obvious in view of Sherman.

Claims 1, 2, 3, 4, 6, 7, 8, 13, 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Theil (DE 2930484) and applicant's new admission (May 15, 2007 response, page 4 of 5, section entitled "Second Matter") that the prior art GFX Model G2-12 heat exchanger has a wraparound tube with a flattened side wall satisfying all of the limitations of original claim 9 and optionally Bardenheier (USP 4,782,888) as a teaching reference.

Figures 1 and 2 of Theil disclose a pre-fabricated pipe 2 having a heat exchanger can be inserted into an existing main drinking water pipe 13. The heat exchanger transfers heat to a primary heat transfer fluid circulated in pipes 3, 4, which forms a closed circuit. A heat pump provides heating or cooling to the house 6.

Bardenheier teaches a municipal water line 16 with a heat exchanger 14 in thermal contact with the water in the municipal water main 16. The heat exchanger 14 transfers heat to a primary heat transfer liquid (water or water and propylene glycol) circulated in pipe system 11. Individual heat pumps (see col. 6, line 33) can be used to transfer heat from the primary heat transfer liquid to the secondary fluid circulated through pipes 13. This secondary fluid can be FREON (see col. 3 lines 33-40) used to provide heating or cooling to a conditioned space occupied by the user. No details of the actual construction of heat exchanger 14 are disclosed.

To have used the apparatus of Theil with the prefabricated heat exchanger construction of the prior art GFX G2-12 heat exchanger (which is disclosed to be used in a flooded state in a water main in Exhibit E-2) including the flattened outer tube (as admitted by applicant) wrapped around the water main (used in place of heat exchangers 2 of Theil) to recover heat from a municipal water supply would have been obvious in view of the fact that Bardenheier discloses municipal water "provides an outstanding source or sink of low grade thermal energy" for reasons stated in col. 4, lines 16-36 of Bardenheier, incorporated here by reference. That is, in Theil the prefabricated pipe section of the GFX G2-12 would have been simply inserted into a new construction or an existing water main and then connected the rest of Theil's

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system in place of Theil's heat exchangers 2. To the extent that it is necessary to support the rejection the conceded prior art pre-fabricated GFX G2-12 heat exchanger design for use in flooded water mains shows the details of a heat exchanger coil wrapped around a section of replaceable pipe intended to be inserted into an existing water pipe which would have been obvious to have used to obtain better heat transfer and possibly ease the building code approval process. Applicant's new admission (May 15, 2007 response, page 4 of 5, section entitled "Second Matter") that the prior art GFX G2-12 heat exchanger (as well as all of the other models shown to the examiner) has a wraparound tube with a flattened side wall satisfying all of the limitations of original claim 9 (which limitations of original claim 9 have now been rewritten into claims 1, 14 and 28) is acknowledged here.

Regarding the claimed monitoring equipment, see element 18 of Bardenheier which would have been obvious to have added to Theil/GFX G2-12 combination described above to advantageously insure a safe water supply. Regarding the claimed "enclosing" structure, this appears to be shown in Figure 2 of Theil.

Claims 5, 16, 28-31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art (Theil/GFX G2-12/ Bardenheier), as applied to claims 4 and 15 above, and further in view of Fr 2381869 and Sherman.

Fr '869 teaches an enclosure 1 for a water main 5 and a sewer pipe 6 that are essentially of identical construction. A cover 2 is shown that clips into place. To have used such an enclosure to enclose the water main of the prior art would have been obvious to permit easy access for inspection or repair and likewise to have locked it to prevent unauthorized access would have been obvious in view of Sherman.

Claims 1, 2, 3, 4, 6, 7, 8, 13, 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Bardenheier (USP 4,782,888), Exhibit E-2 (showing the GFX Model G2-12 installed in a water main) and any one of applicant's new admission (May 15, 2007 response, page 4 of 5, section entitled "Second Matter") that the prior art GFX heat exchanger has a wraparound tube with a flattened side wall satisfying all of the limitations of original claim 9, Clancy (USP 2,364,130), JP 88730 (Fig. 3) or JP 9-229574 (Figs. 3-5).

Bardenheier teaches a municipal water line 16 with a heat exchanger 14 in thermal contact with the water in the municipal water main 16. The heat exchanger 14 transfers heat to a primary heat transfer liquid (water or water and propylene glycol) circulated in pipe system 11. Individual heat pumps (see col. 6, line 33) can be used to transfer heat from the primary heat transfer liquid to the secondary fluid circulated through pipes 13. This secondary fluid can be FREON (see col. 3 lines 33-40) used to provide heating or cooling to a conditioned space occupied by the user. No details of the actual construction of heat exchanger 14 are disclosed.

New materials related to the GFX heat exchanger wherein the prefabricated GFX Model G2-12 is designed for use in a water main in a flooded condition (Exhibit E-2, page 2). The heat exchanger transfers heat to a primary heat transfer fluid circulated in a pipe having a "circulator," which forms a closed circuit. To have used the prefabricated pipe section model GFX Model G2-12 in place of schematically shown heat exchanger 14 of Bardenheier would have been obvious to ease construction, improve heat transfer and ease the approval process since GFX heat exchangers have already been approved by many municipalities for use in domestic water systems.

Applicant's new admission (May 15, 2007 response, page 4 of 5, section entitled "Second Matter") that the prior art GFX heat exchanger (including the Model G2-12) has a wraparound tube with a flattened side wall satisfying all of the limitations of original claim 9 (which limitations of original claim 9 have now been rewritten into claims 1, 14 and 28) is acknowledged here. As well, Clancy disclosed a coil 30 of a somewhat flattened cross-section (col. 3, lines 38-42, "so as to increase the area of contact with the sleeve") that it is helically wound around. Essentially the same disclosure is found in the referenced figures in the two Japanese publications. To have flattened the cross-section of the heat exchanger tubing wound around the water pipe (if the GFX Model G2-12 is not already of the flattened tube wall construction) as taught by this latter prior art to increase the contact area and, hence, the heat transfer would have been obvious to one of ordinary skill in the art, in view of these four separate teachings of the same.

Regarding the claimed monitoring equipment, see element 18 of Bardenheier.



Claims 5, 16, 28-31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art discussed immediately above (Bardenheier/GFX Model G2-12/GFX admission etc), as applied to claims 4 and 15 immediately above, and further in view of Fr 2381869 and Sherman.

Fr '869 teaches an enclosure 1 for a water main 5 and a sewer pipe 6 that are essentially of identical construction. A cover 2 is shown that clips into place. To have used such an enclosure to enclose the water main of the prior art would have been obvious to permit easy access for inspection or repair and likewise to have locked it to prevent unauthorized access would have been obvious in view of Sherman.

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on May 16, 2007 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

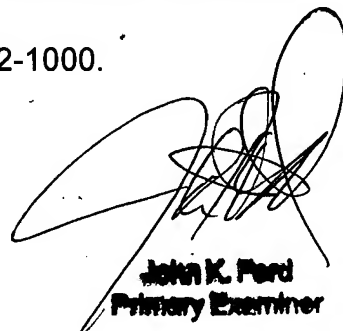
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Ford whose telephone number is 571-272-4911. The examiner can normally be reached on Mon.-Fri. 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**John K. Ford**  
Primary Examiner